Fig. 1

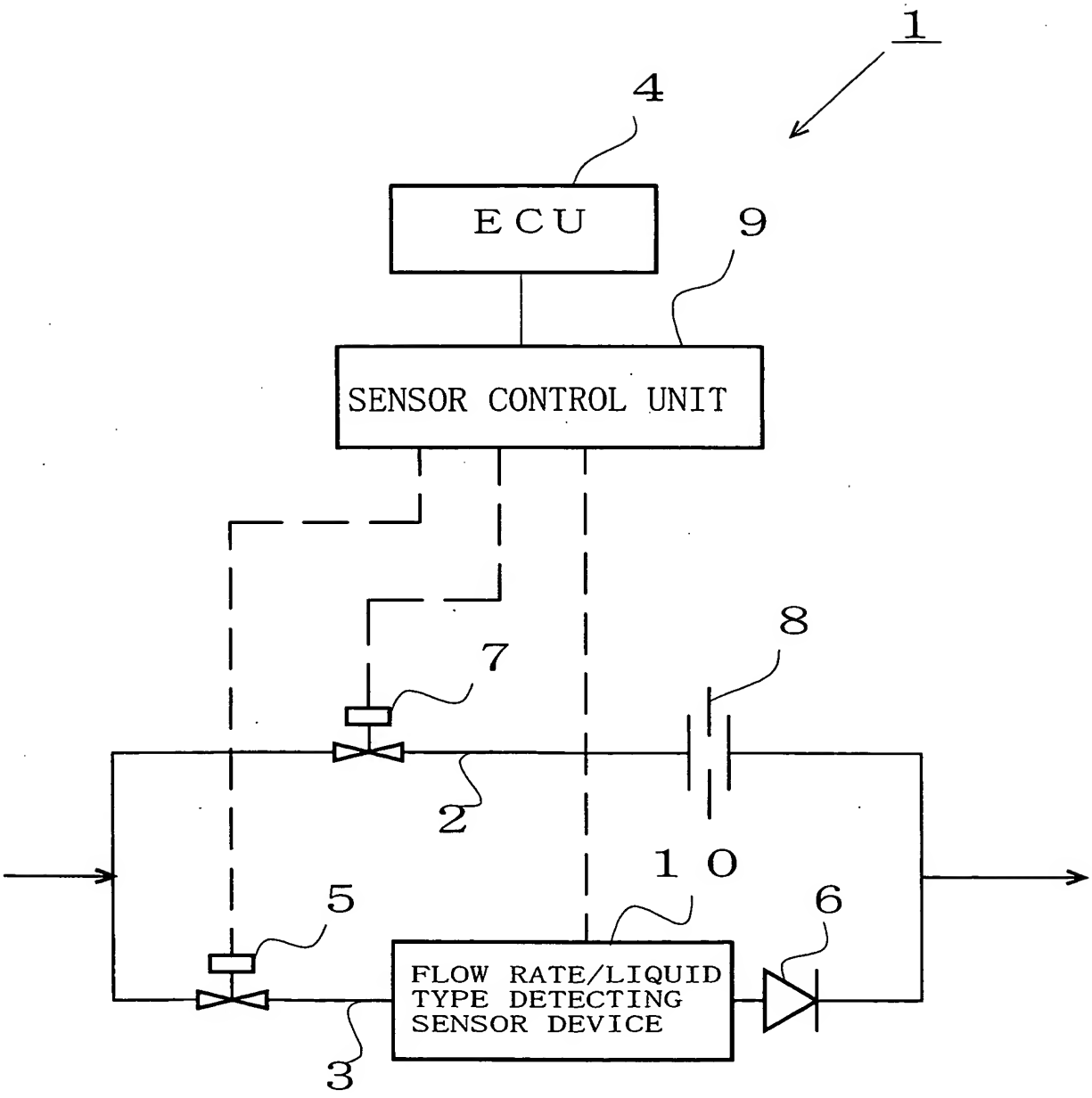

1
4
ECU
9
SENSOR CONTROL UNIT
8
7
2
10
5
6
FLOW RATE/LIQUID TYPE DETECTING SENSOR DEVICE
3

Fig. 2

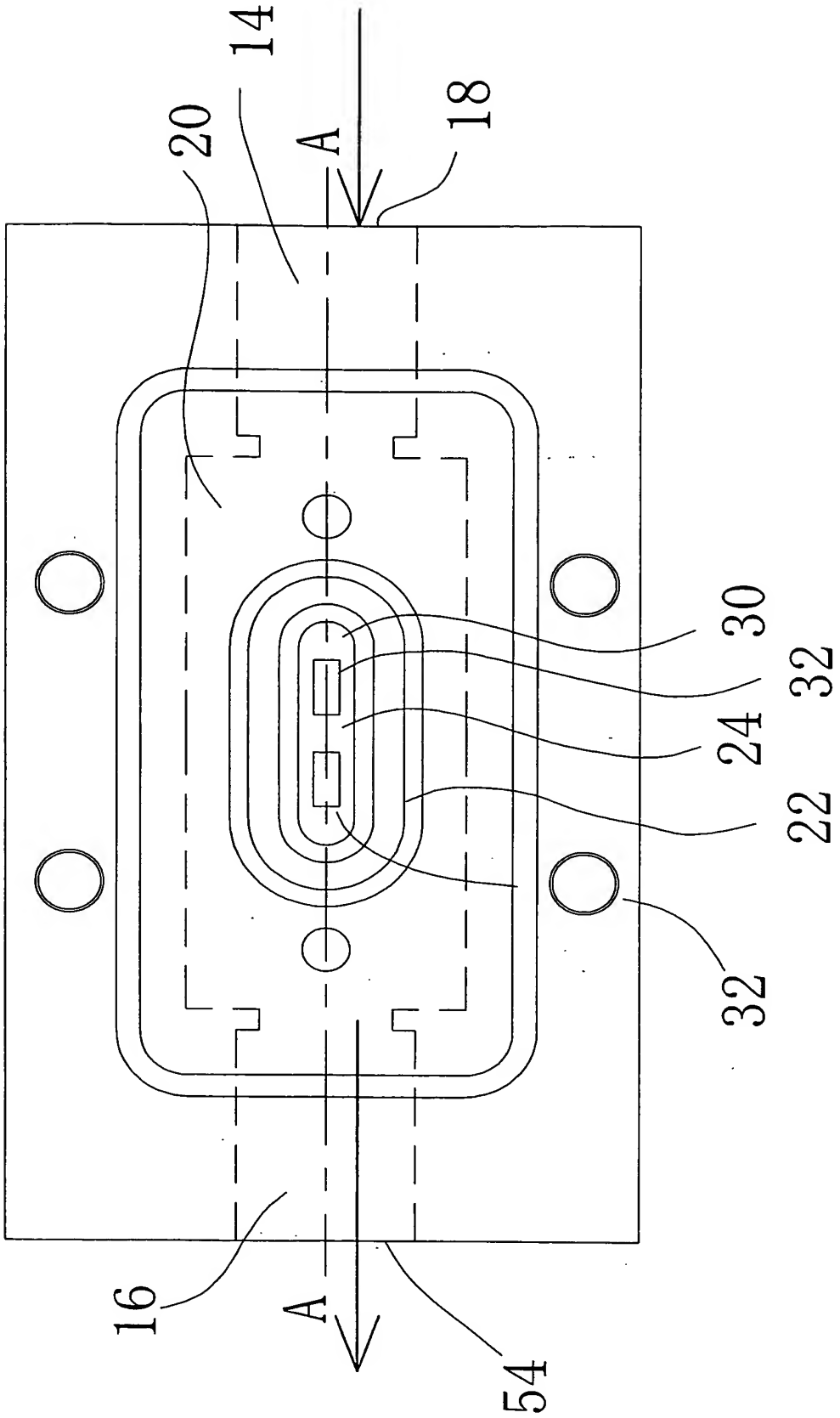


Fig. 3

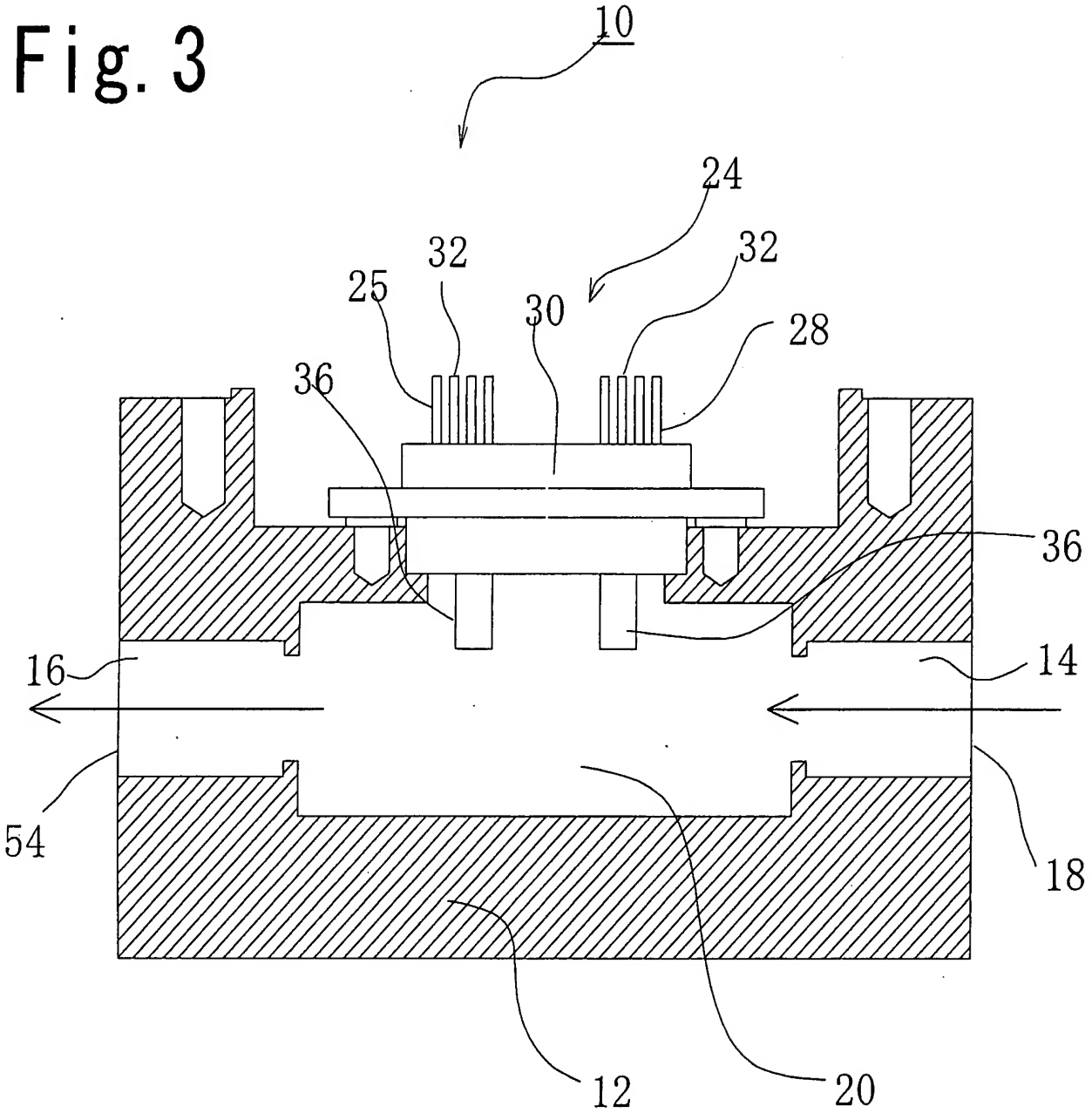


Fig. 4

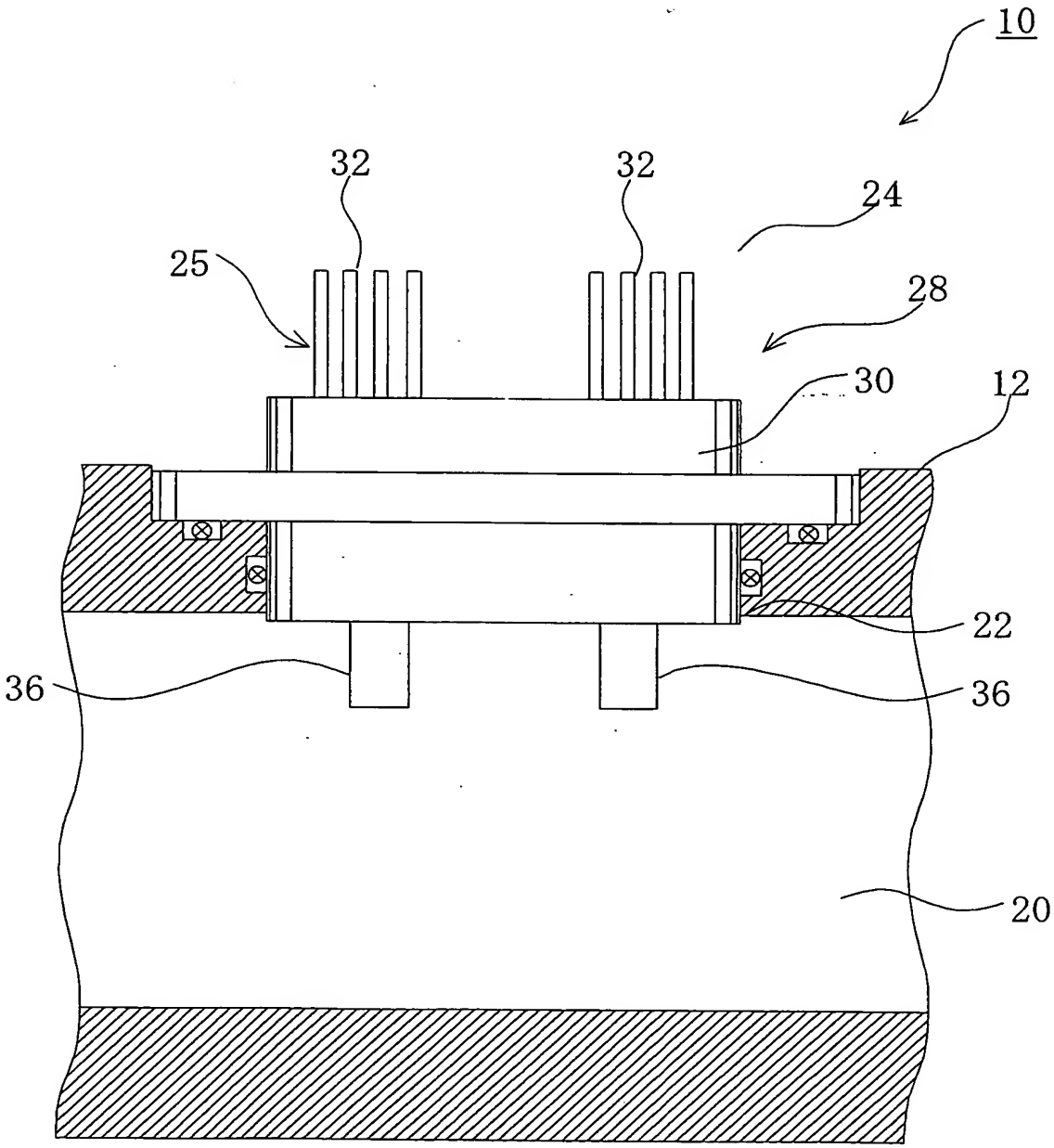


Fig. 5

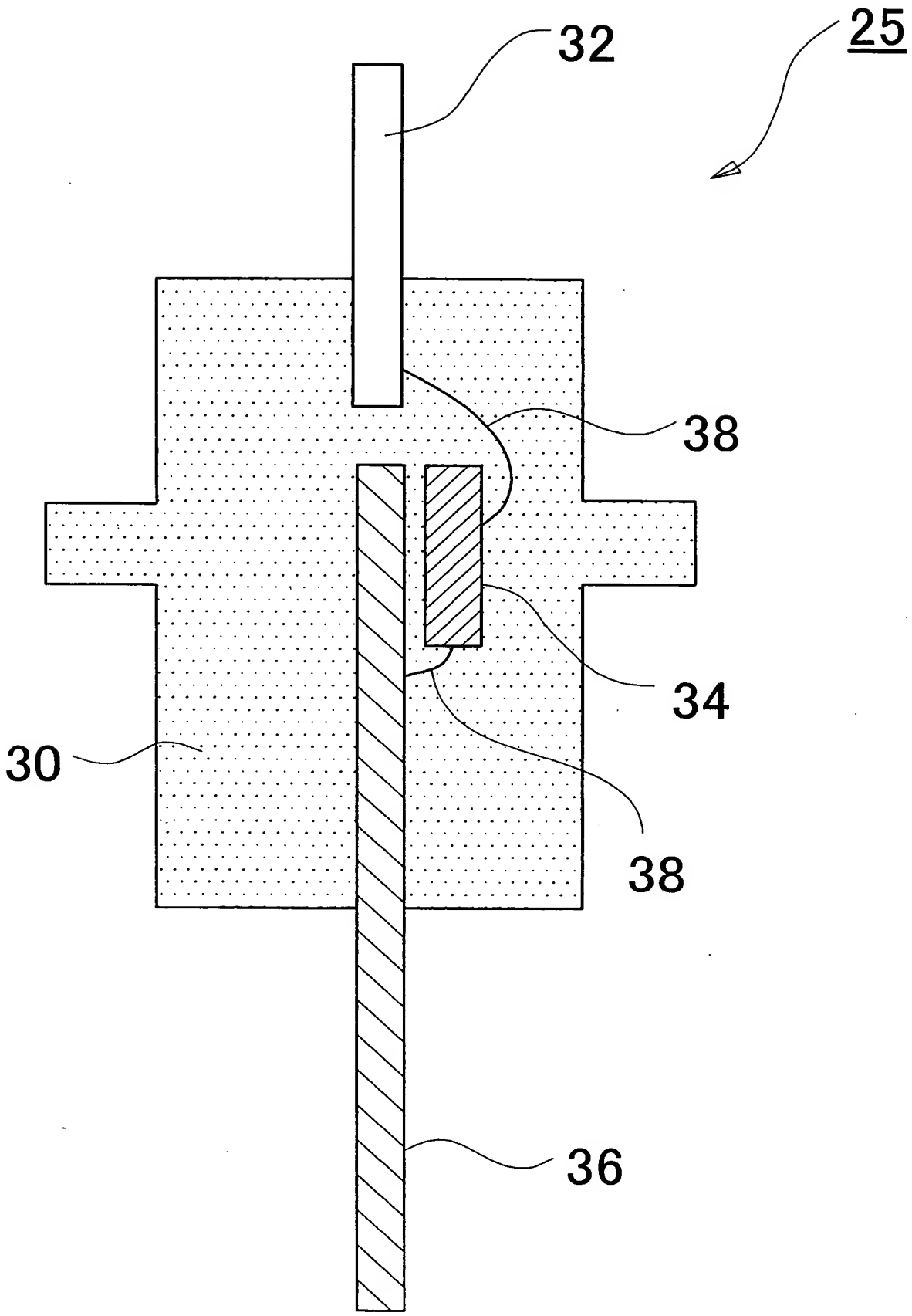


Fig. 6

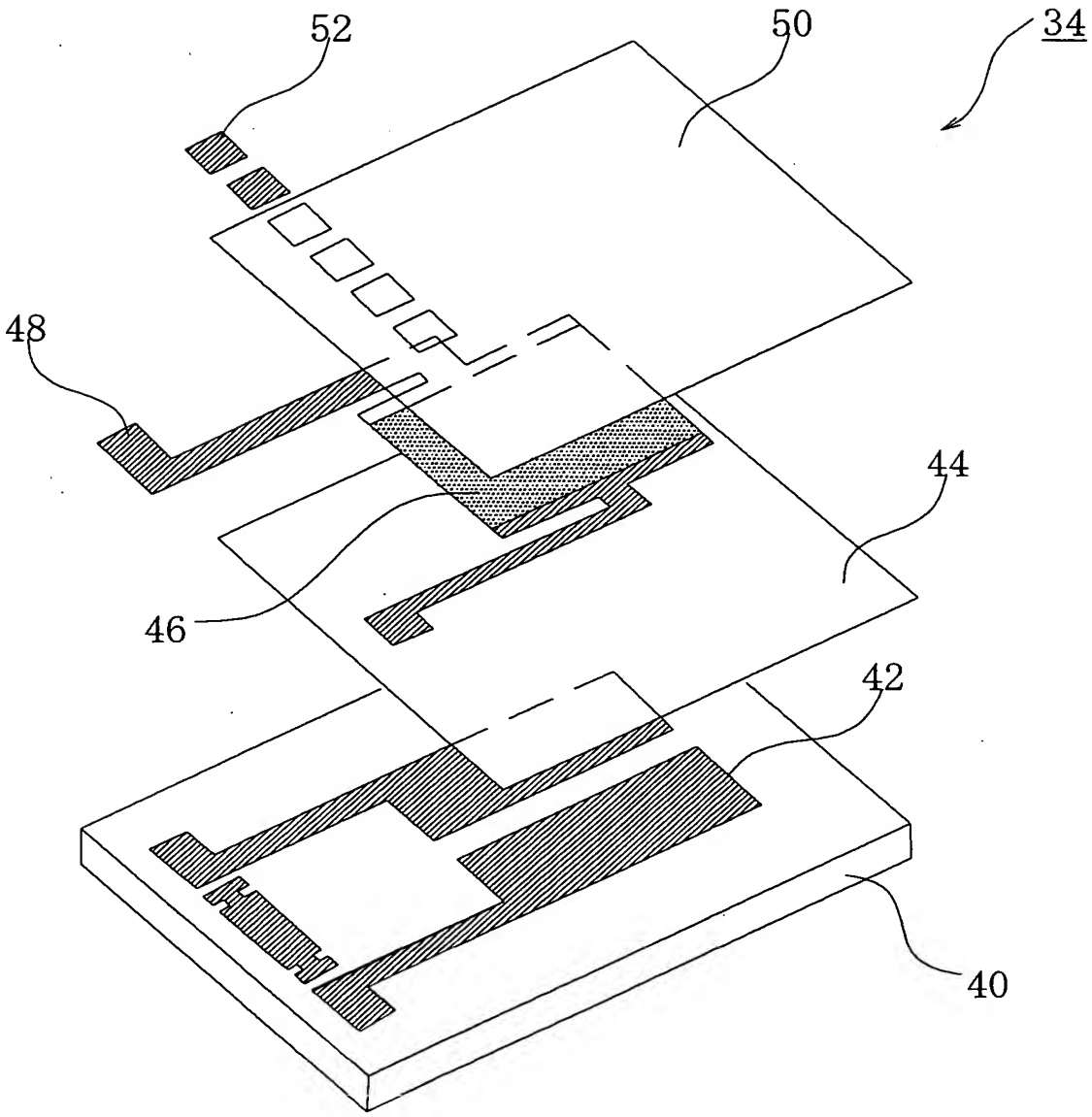


Fig. 7

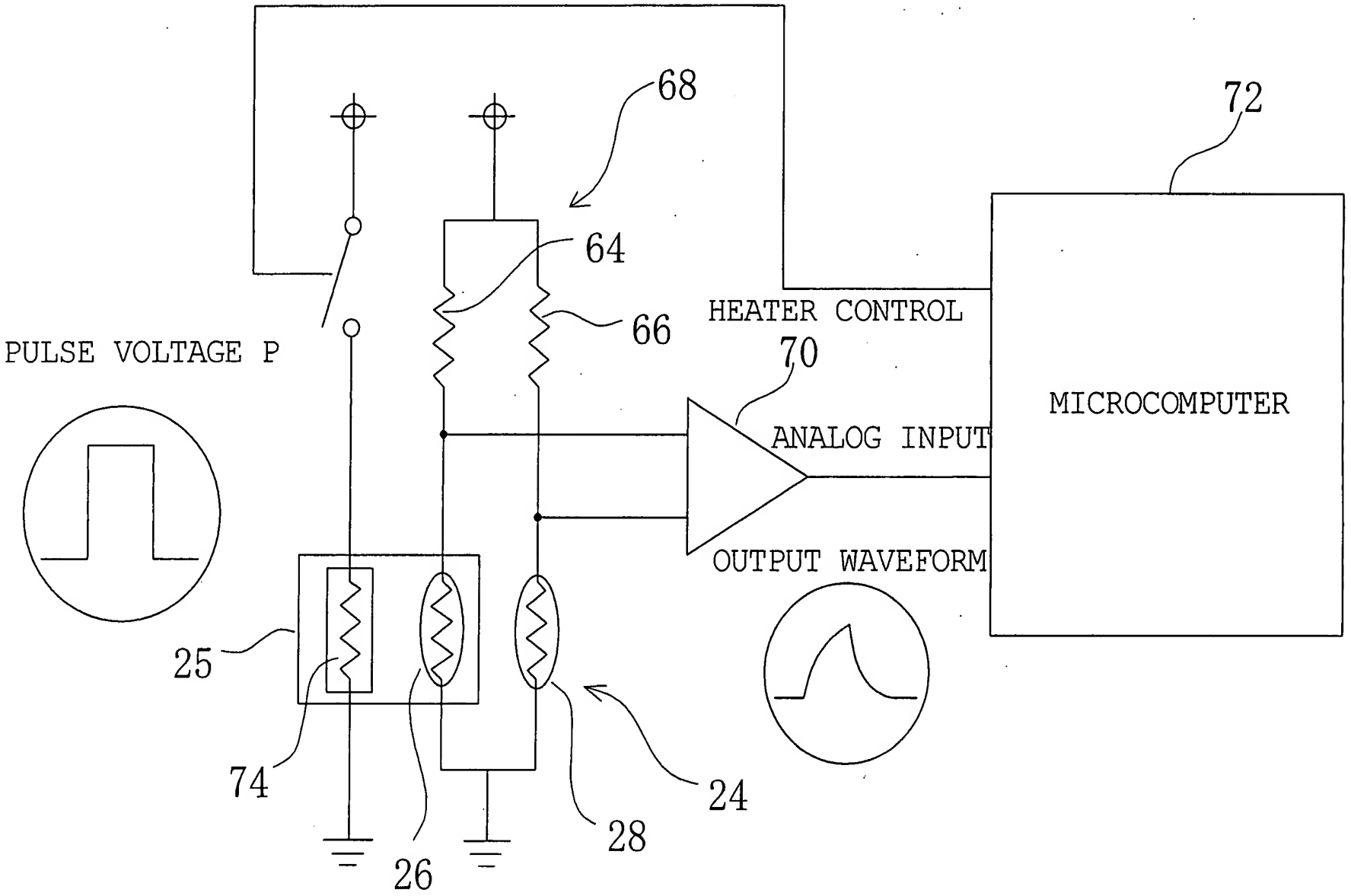

68
72
64
66
HEATER CONTROL
PULSE VOLTAGE P
70
MICROCOMPUTER
ANALOG INPUT
OUTPUT WAVEFORM
25
74
26
28
24

Fig. 8

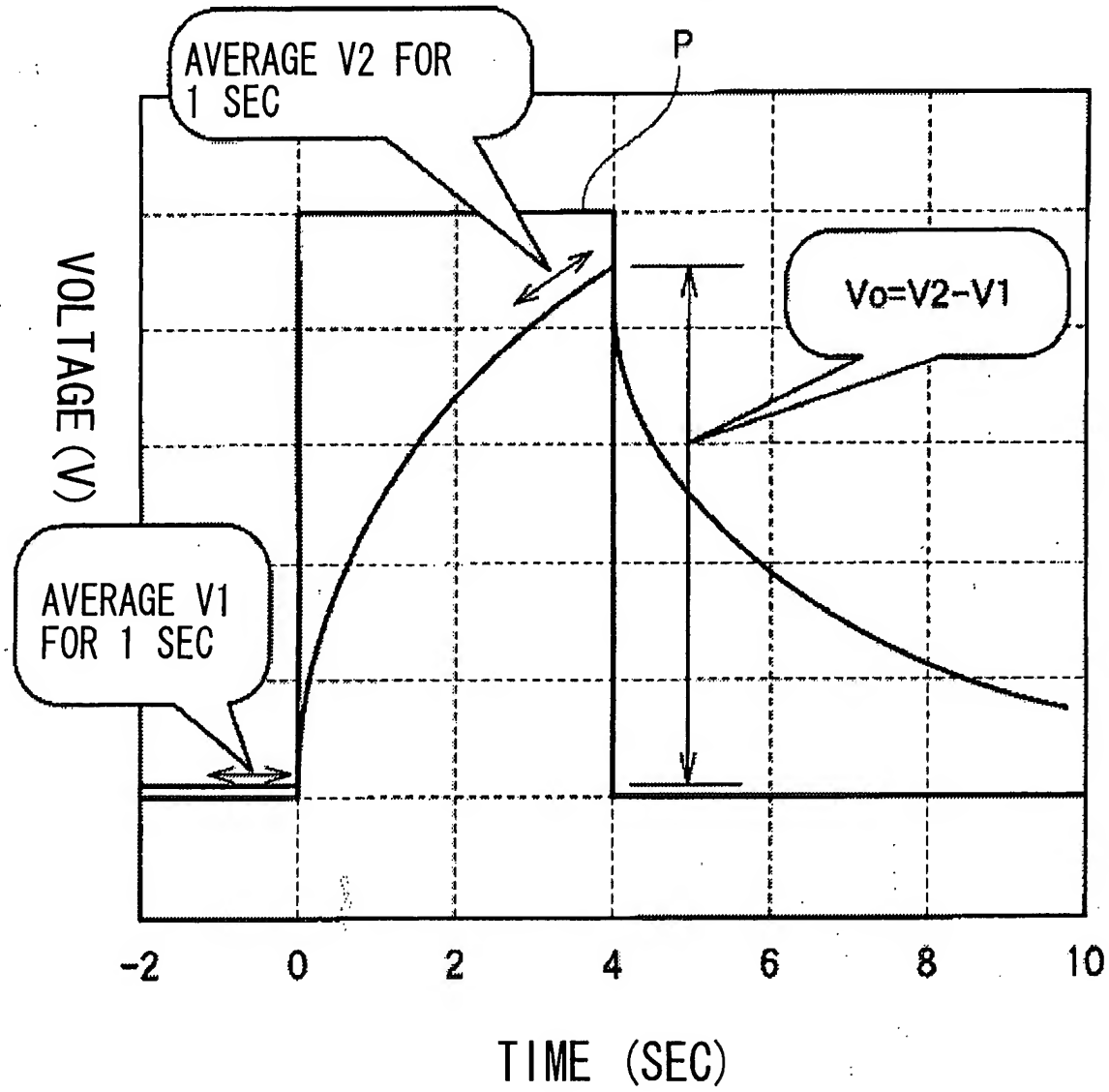
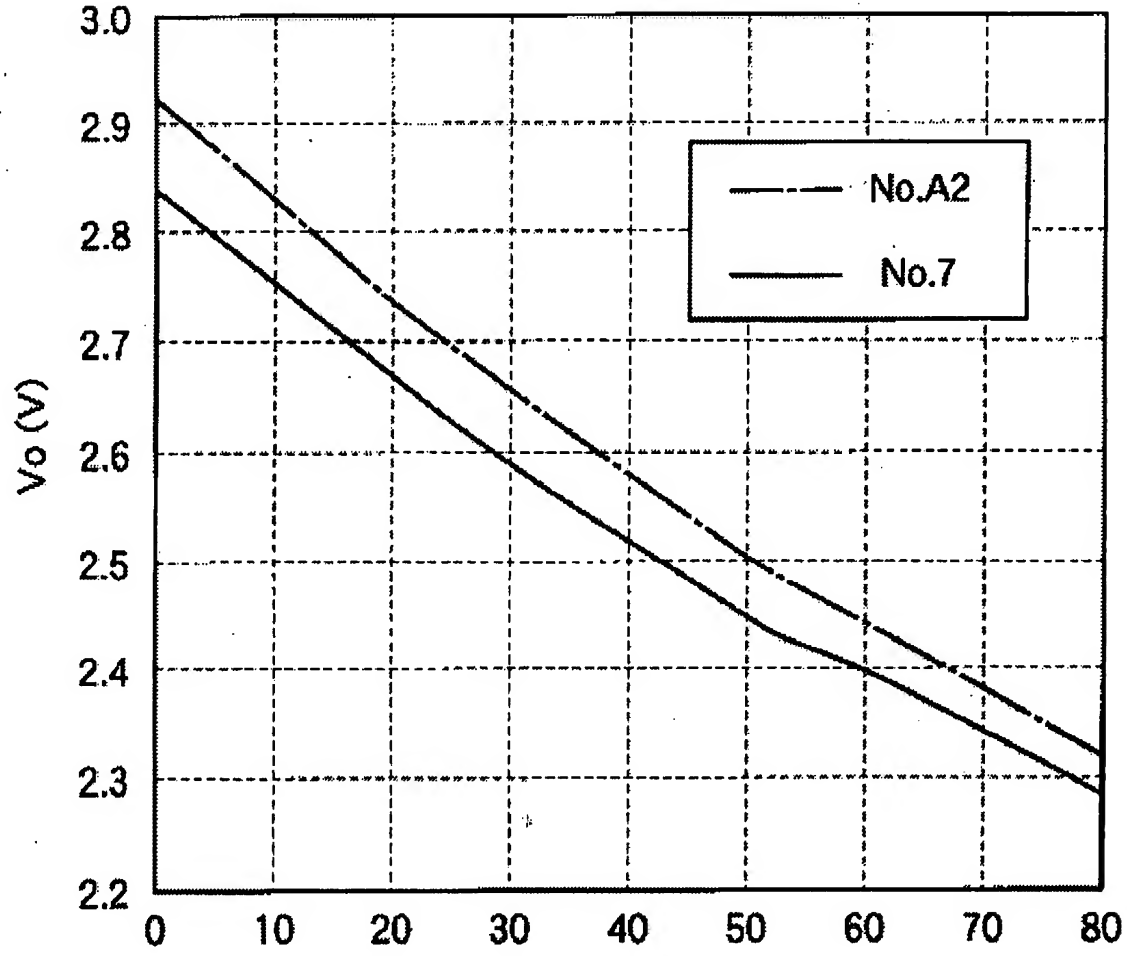
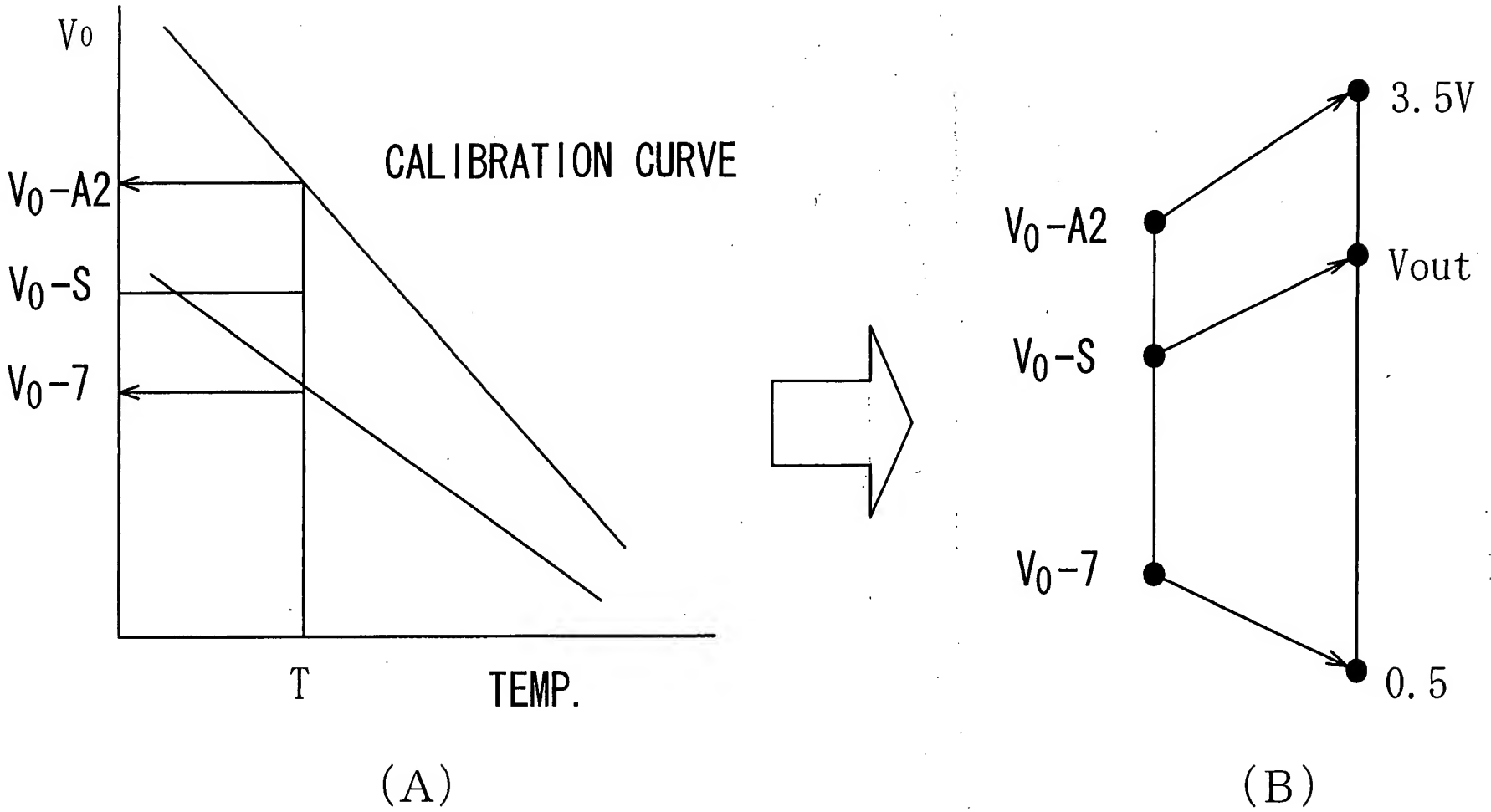

AVERAGE V2 FOR 1 SEC
P
Vo=V2-V1
AVERAGE V1 FOR 1 SEC
VOLTAGE (V)
-2
0
2
4
6
8
10
TIME (SEC)

Fig. 9



CALIBRATION CURVE

Fig. 10



OUTPUT CORRECTION METHOD

Fig. 11

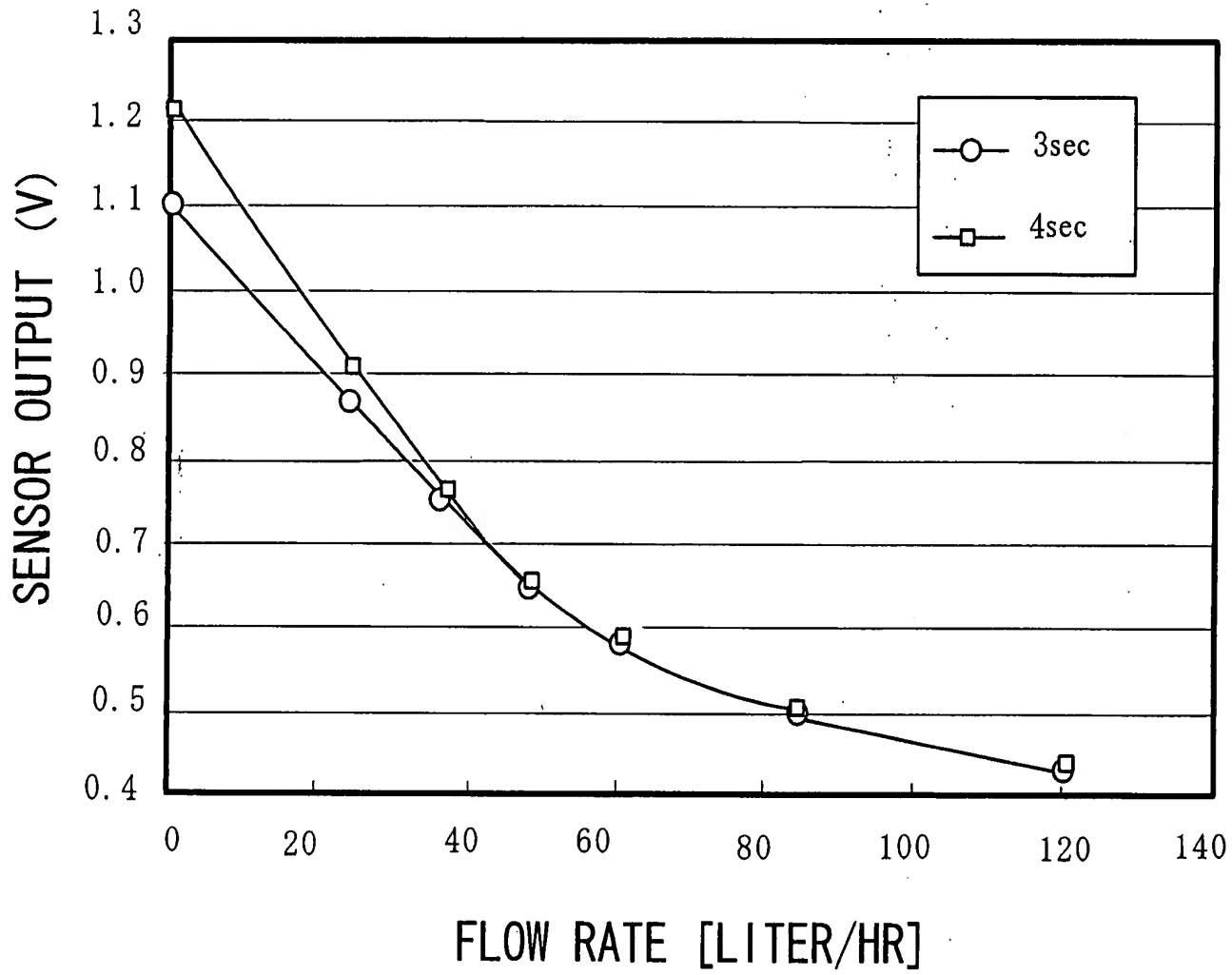

SENSOR OUTPUT (V)
1.3
1.2
1.1
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0
20
40
60
80
100
120
140
FLOW RATE [LITER/HR]
3sec
4sec

Fig. 12

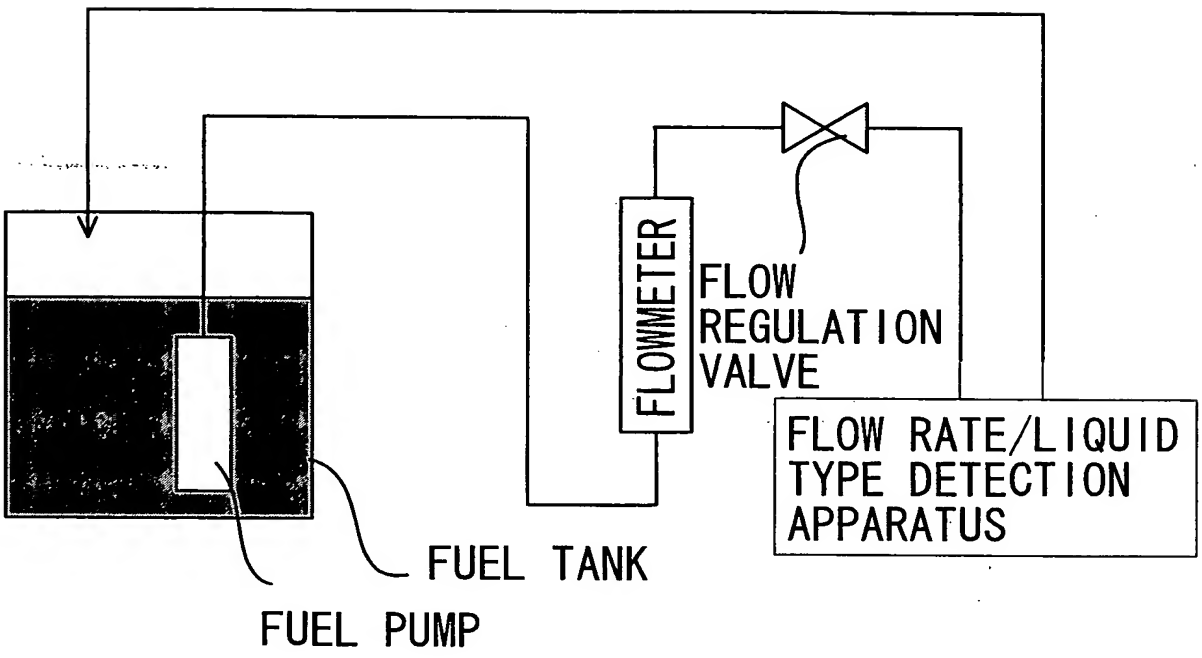
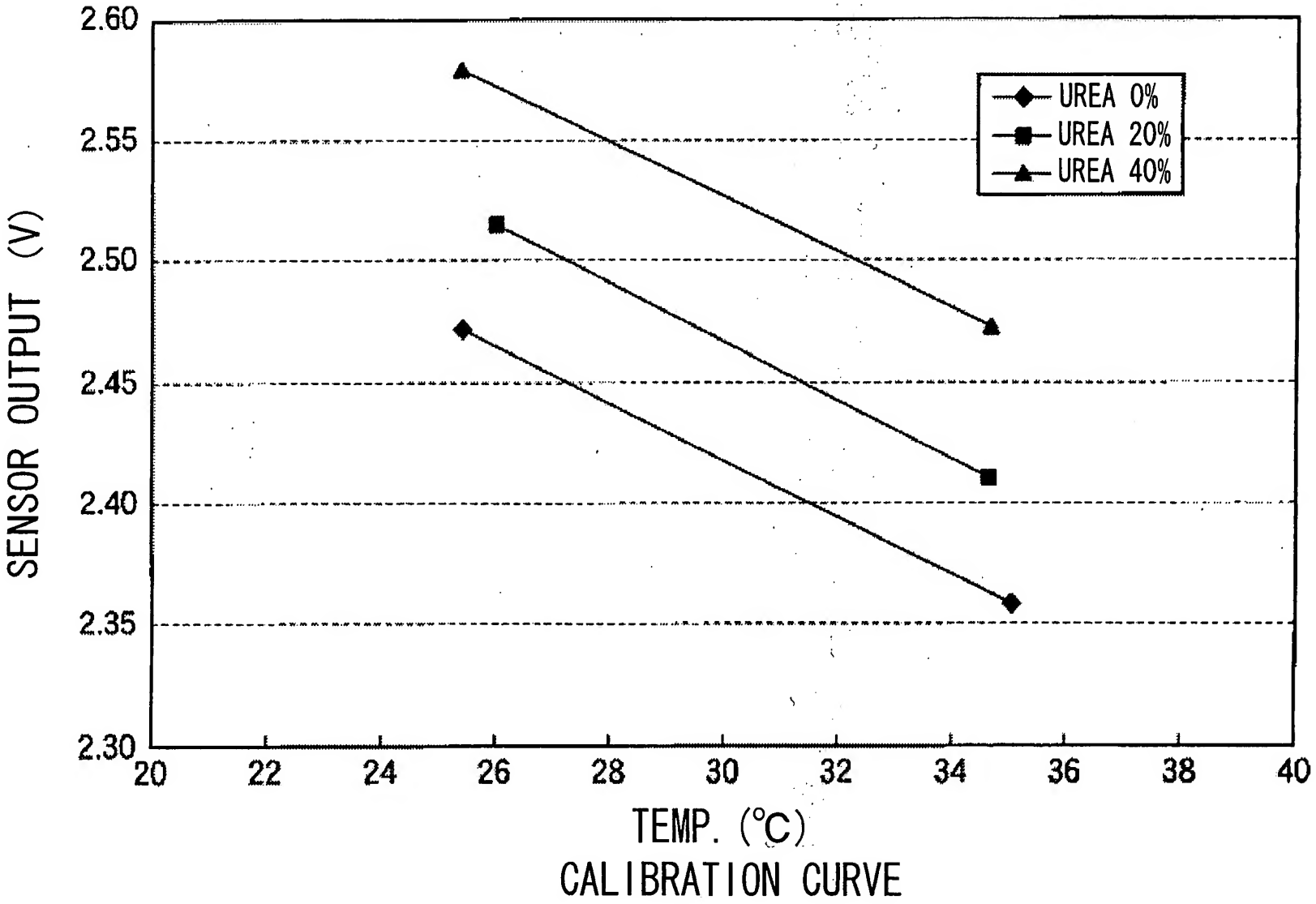

FLOWMETER
FLOW
REGULATION
VALVE
FLOW RATE/LIQUID
TYPE DETECTION
APPARATUS
FUEL TANK
FUEL PUMP

Fig. 13



CALIBRATION CURVE

Fig. 14

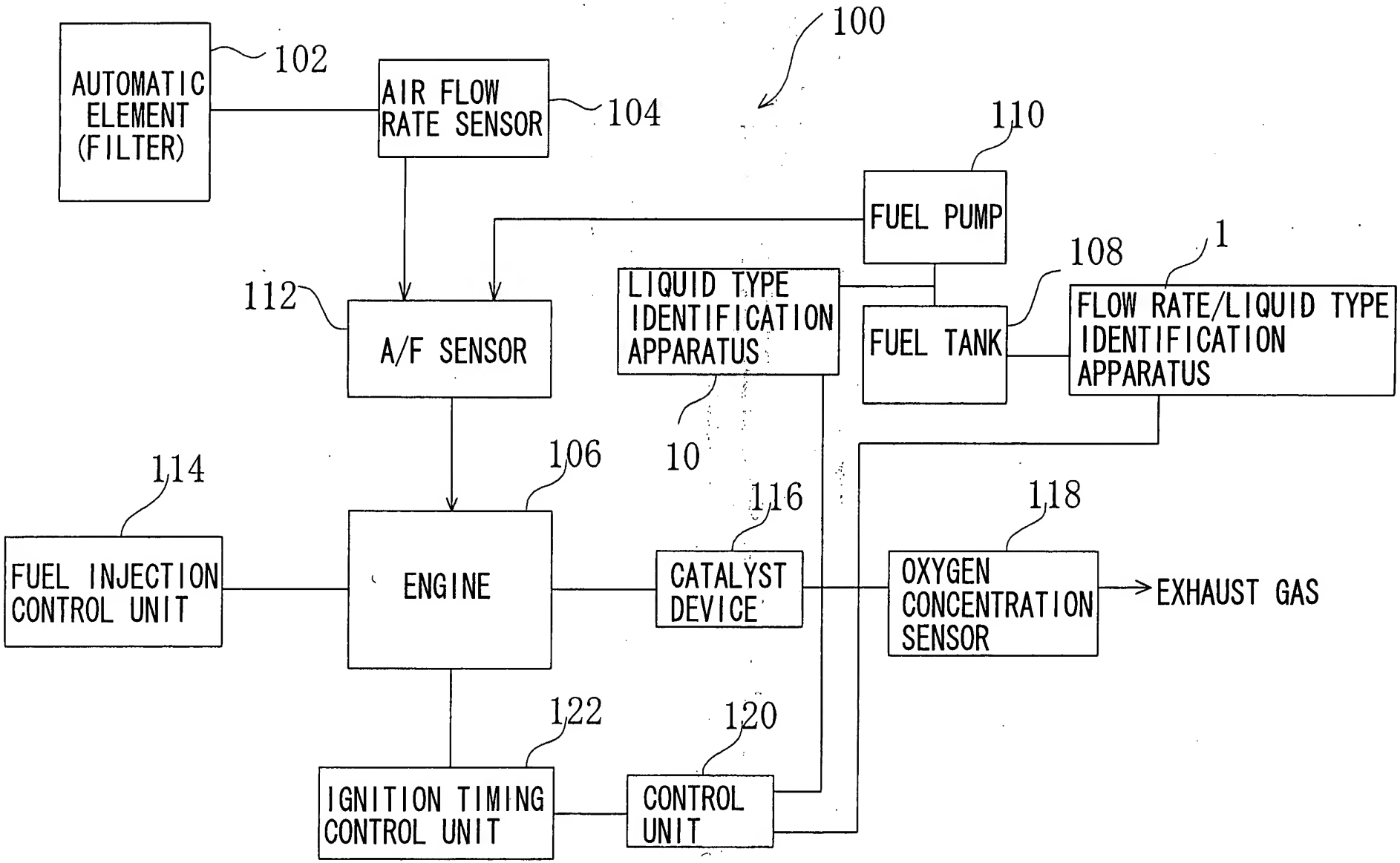

100
AUTOMATIC ELEMENT (FILTER)
102
AIR FLOW RATE SENSOR
104
110
FUEL PUMP
112
A/F SENSOR
LIQUID TYPE IDENTIFICATION APPARATUS
10
108
FUEL TANK
1
FLOW RATE/LIQUID TYPE IDENTIFICATION APPARATUS
114
FUEL INJECTION CONTROL UNIT
106
ENGINE
116
CATALYST DEVICE
118
OXYGEN CONCENTRATION SENSOR
EXHAUST GAS
122
IGNITION TIMING CONTROL UNIT
120
CONTROL UNIT

Fig. 15

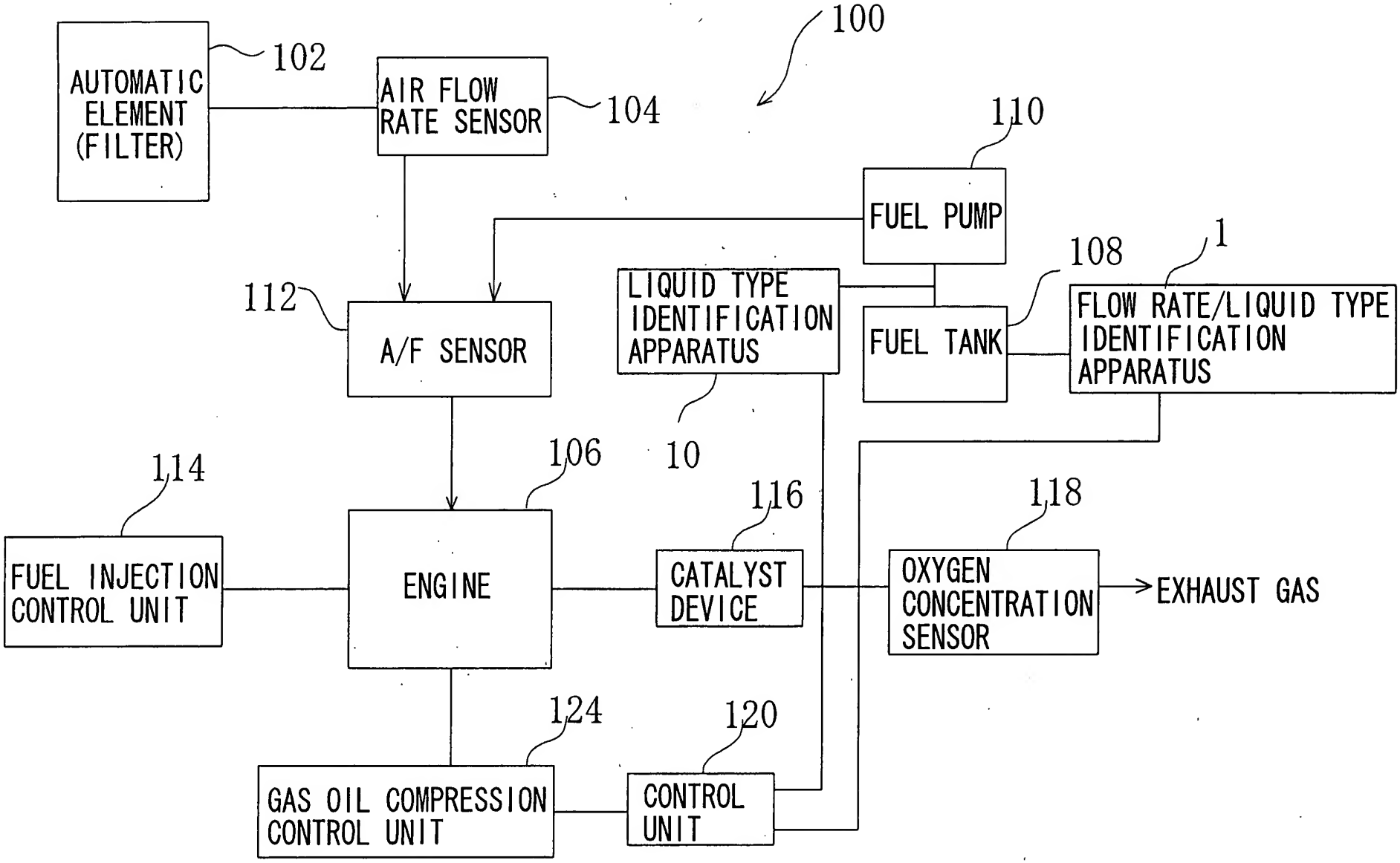

100
AUTOMATIC ELEMENT (FILTER)
102
AIR FLOW RATE SENSOR
104
110
FUEL PUMP
112
A/F SENSOR
LIQUID TYPE IDENTIFICATION APPARATUS
10
108
FUEL TANK
1
FLOW RATE/LIQUID TYPE IDENTIFICATION APPARATUS
114
106
116
118
FUEL INJECTION CONTROL UNIT
ENGINE
CATALYST DEVICE
OXYGEN CONCENTRATION SENSOR
EXHAUST GAS
124
120
GAS OIL COMPRESSION CONTROL UNIT
CONTROL UNIT

Fig. 16

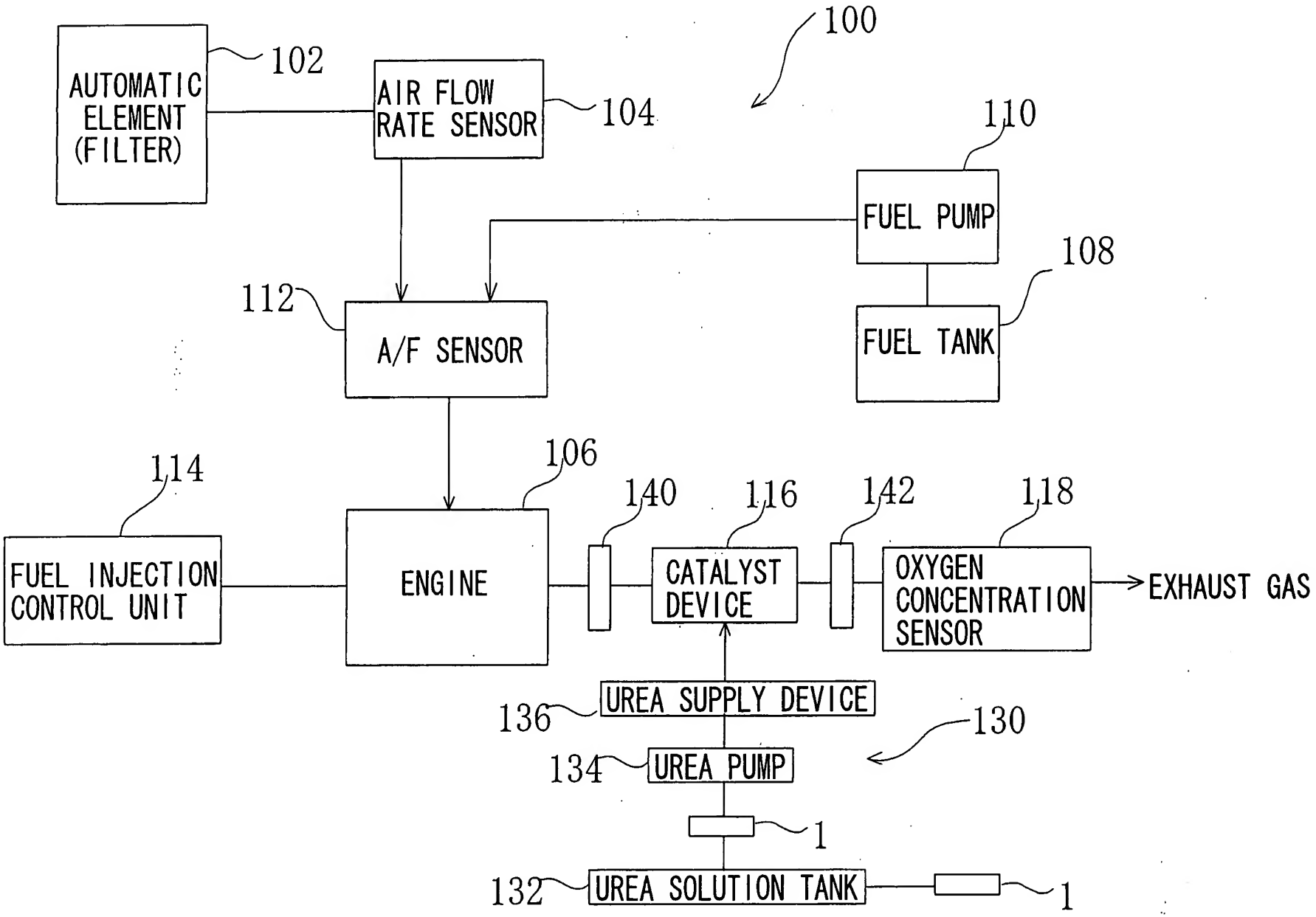

100
AUTOMATIC ELEMENT (FILTER)
102
AIR FLOW RATE SENSOR
104
110
FUEL PUMP
108
112
A/F SENSOR
FUEL TANK
114
106
140
116
142
118
FUEL INJECTION CONTROL UNIT
ENGINE
CATALYST DEVICE
OXYGEN CONCENTRATION SENSOR
EXHAUST GAS
UREA SUPPLY DEVICE
136
130
134
UREA PUMP
1
132
UREA SOLUTION TANK
1

Fig. 17

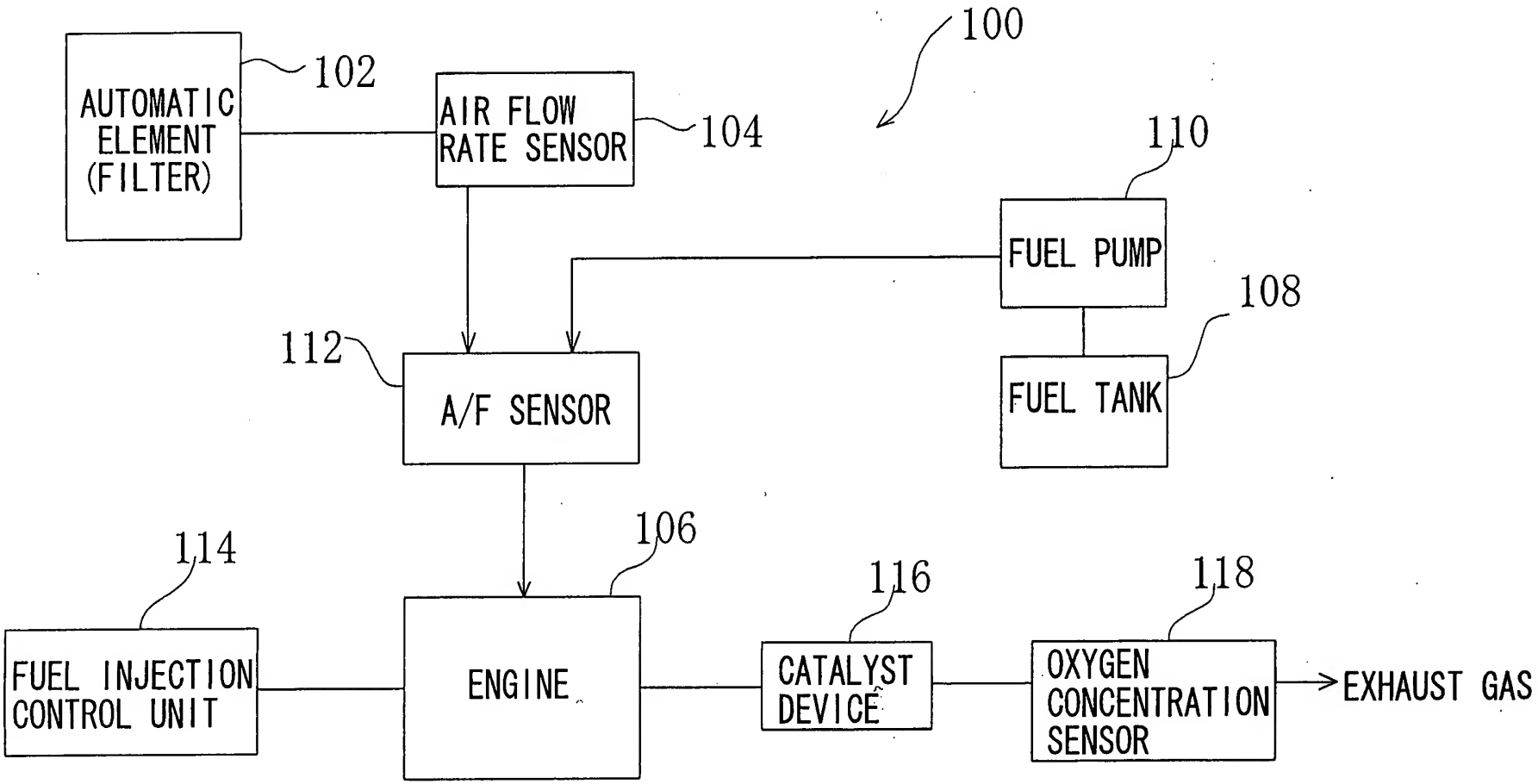

100
AUTOMATIC ELEMENT (FILTER)
102
AIR FLOW RATE SENSOR
104
110
FUEL PUMP
108
FUEL TANK
112
A/F SENSOR
114
106
116
118
FUEL INJECTION CONTROL UNIT
ENGINE
CATALYST DEVICE
OXYGEN CONCENTRATION SENSOR
EXHAUST GAS

Fig. 18

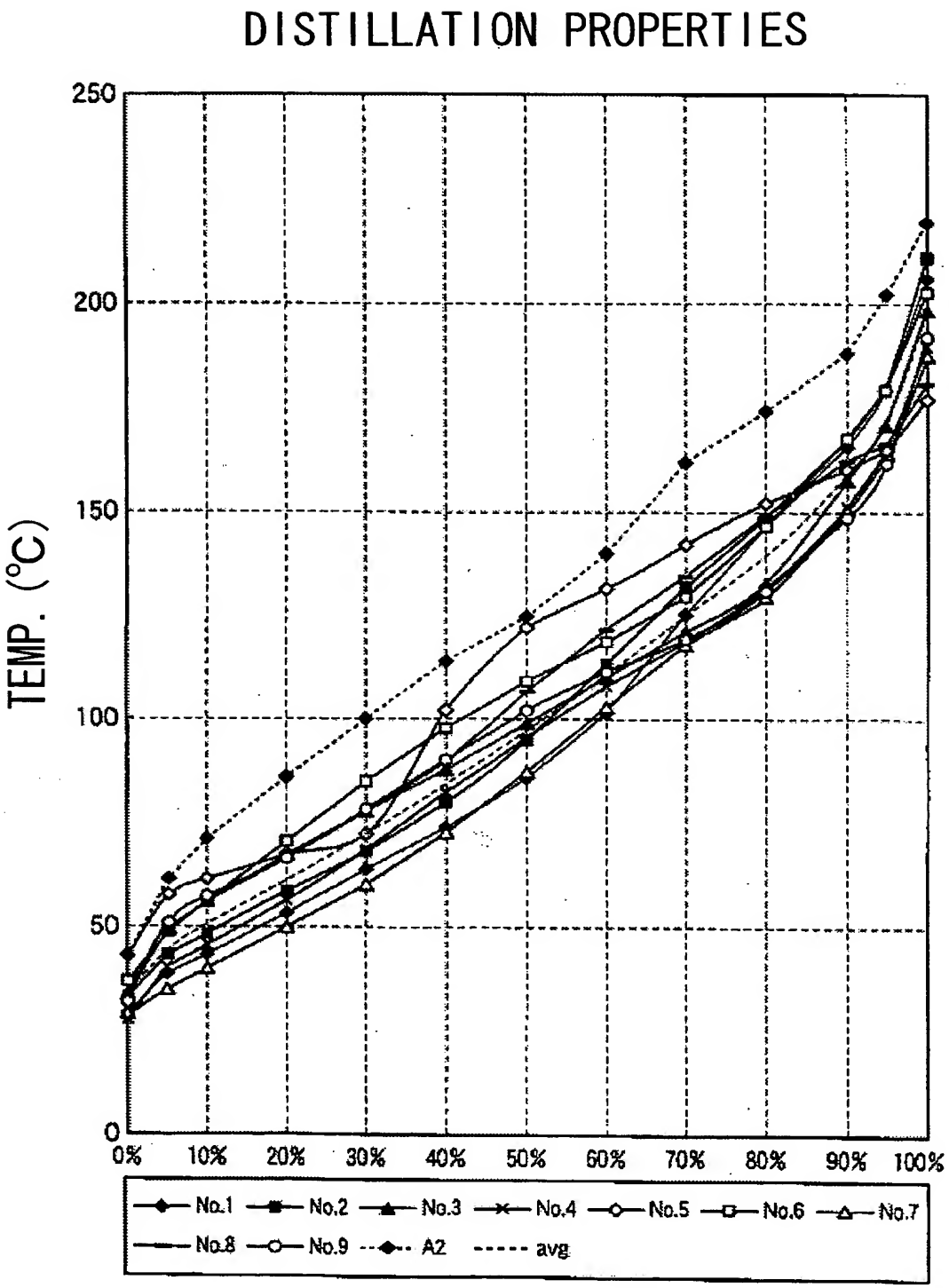

DISTILLATION PROPERTIES
TEMP. (°C)
250
200
150
100
50
0
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
No.1
No.2
No.3
No.4
No.5
No.6
No.7
No.8
No.9
A2
avg.

Fig. 19

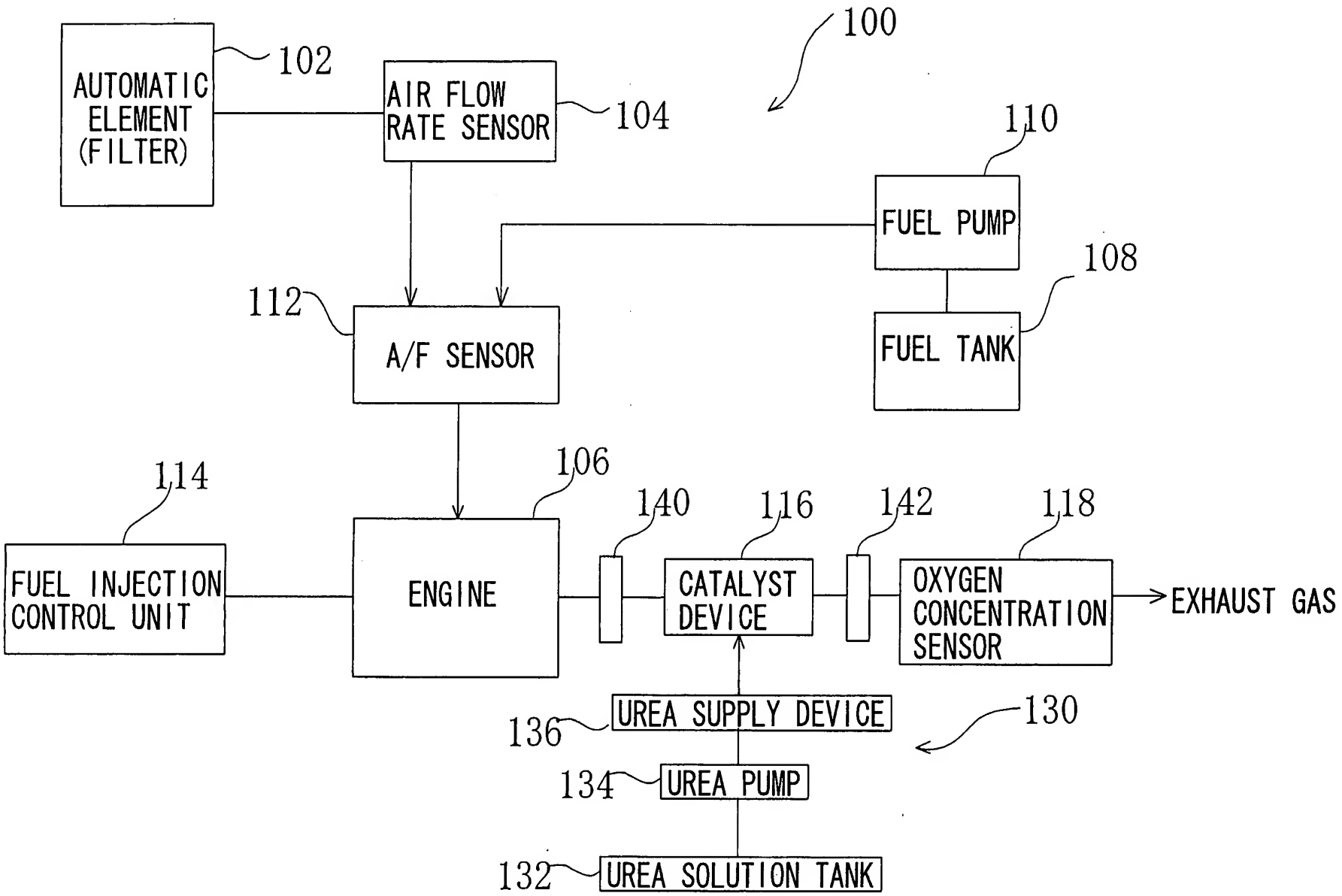

100
AUTOMATIC ELEMENT (FILTER)
102
AIR FLOW RATE SENSOR
104
110
FUEL PUMP
108
112
A/F SENSOR
FUEL TANK
114
106
140
116
142
118
FUEL INJECTION CONTROL UNIT
ENGINE
CATALYST DEVICE
OXYGEN CONCENTRATION SENSOR
EXHAUST GAS
UREA SUPPLY DEVICE
136
130
134
UREA PUMP
132
UREA SOLUTION TANK

Fig. 20

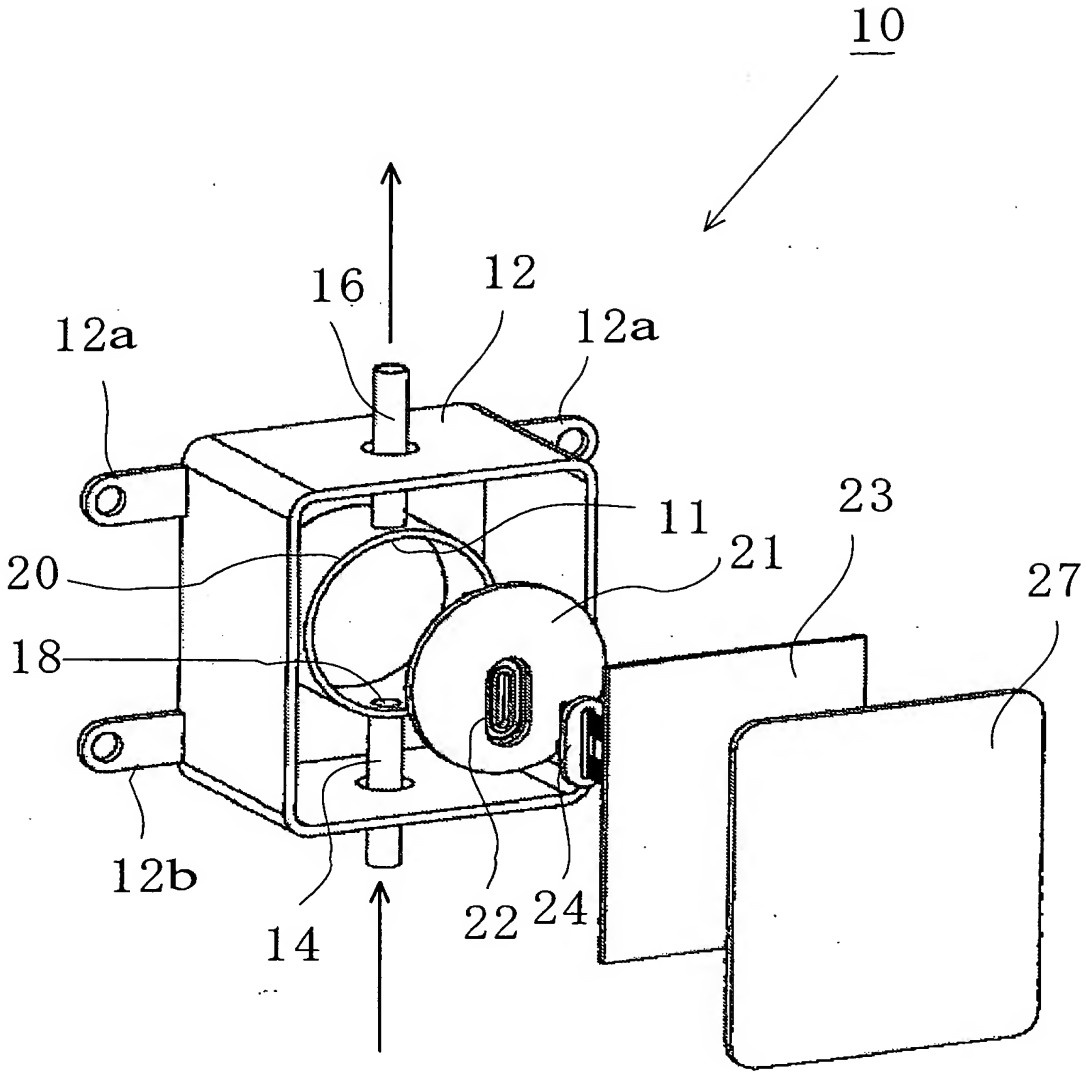


Fig. 21

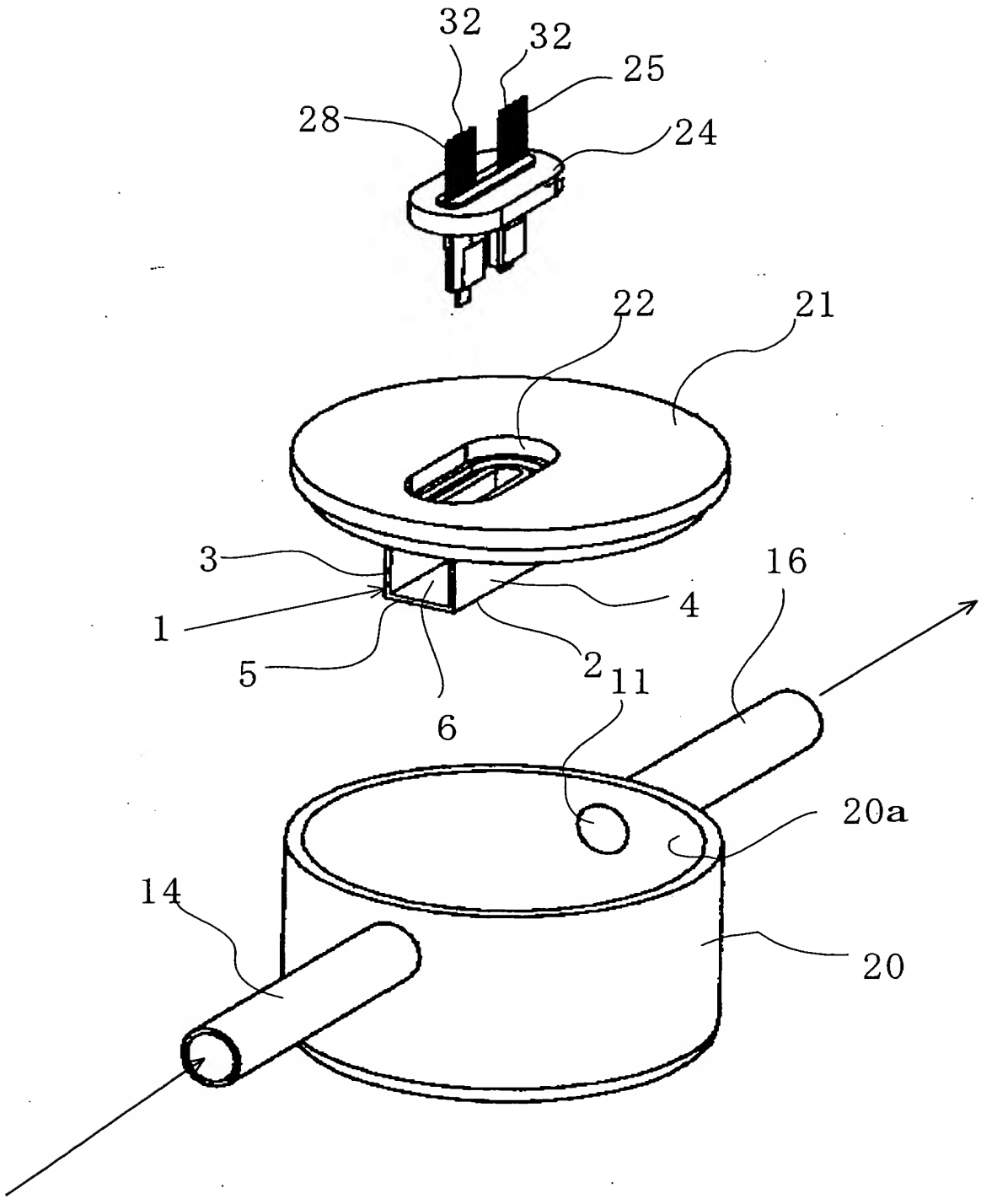


Fig. 22

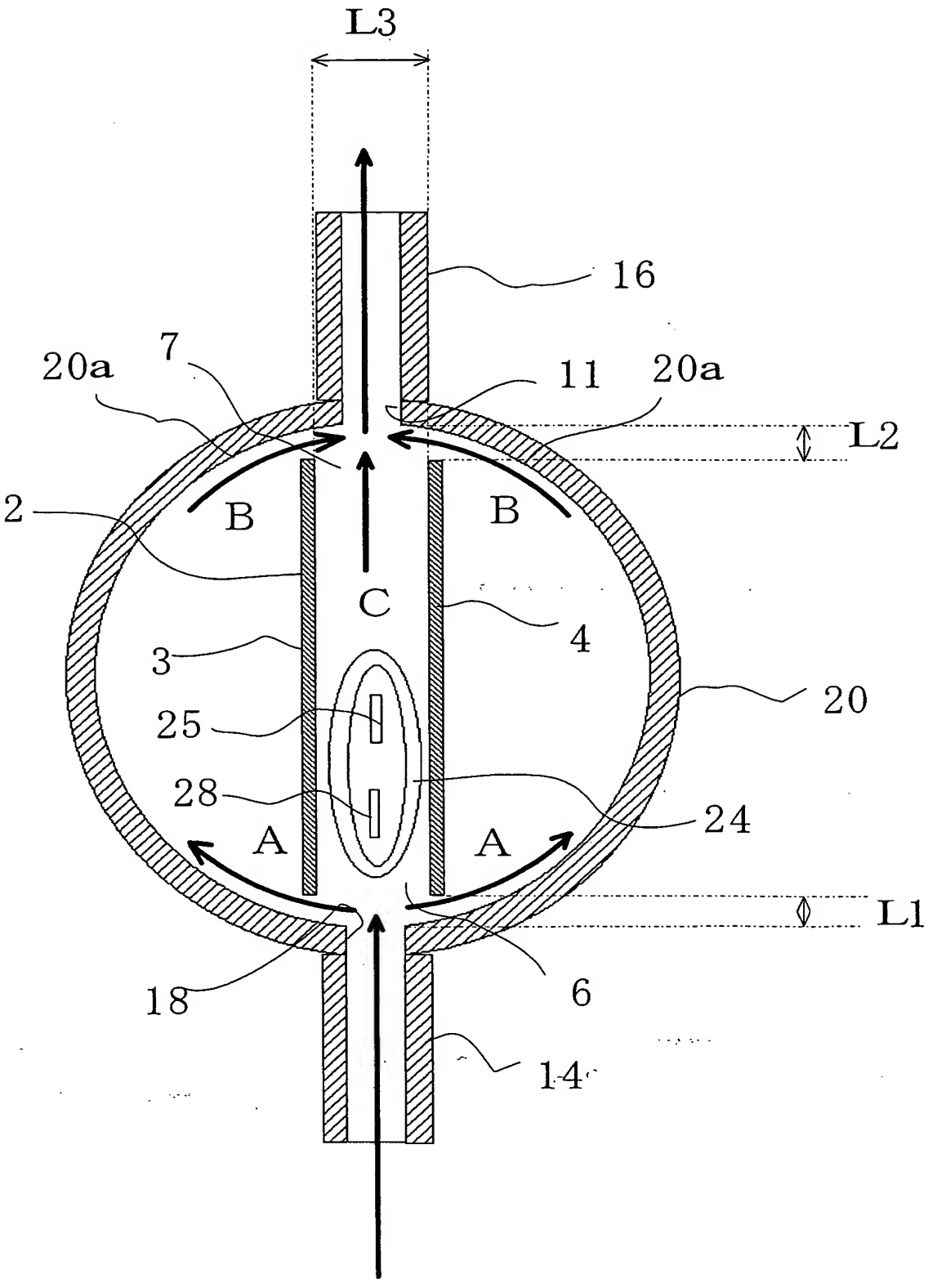
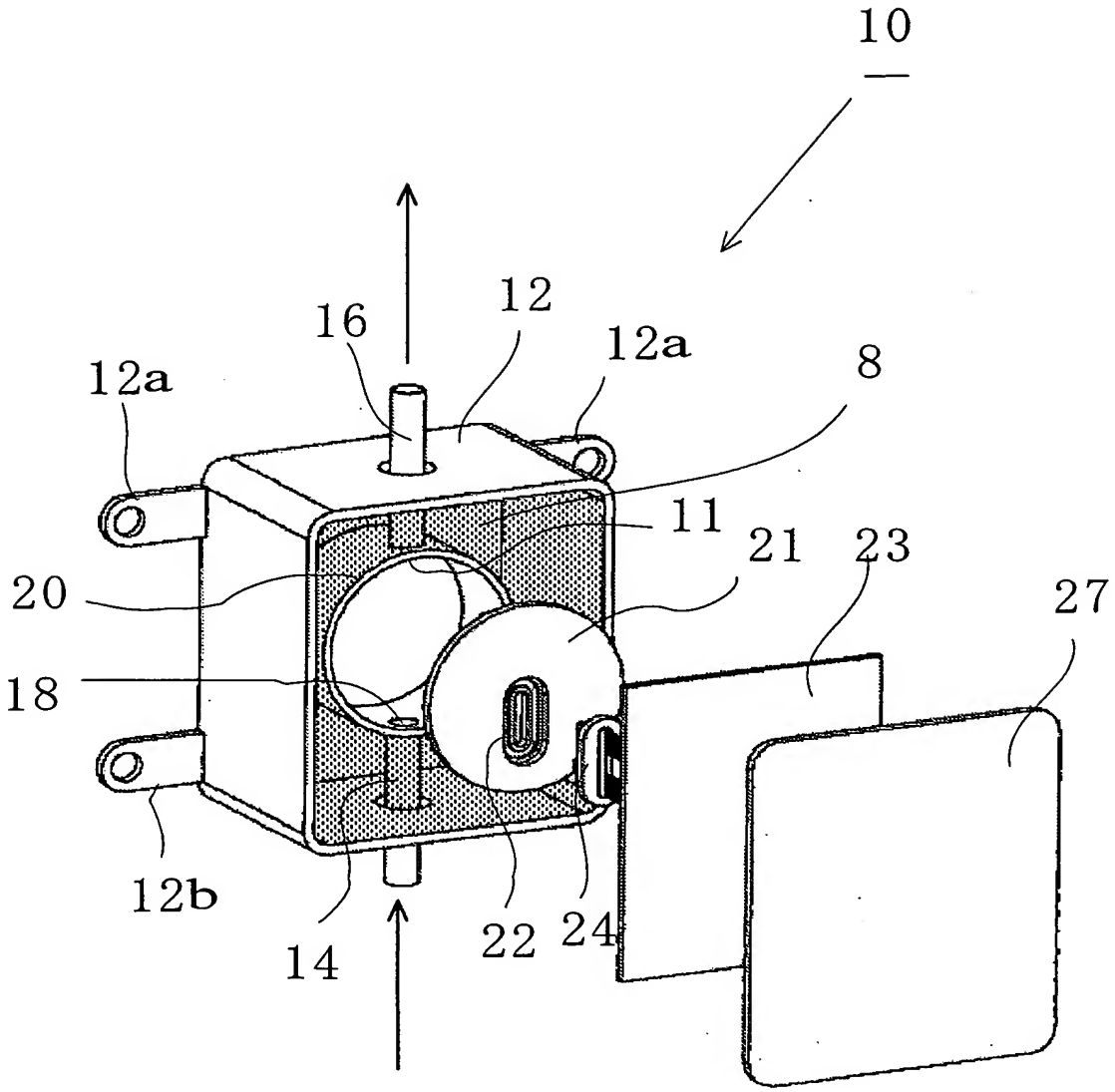



Fig. 23